

IV. INFRASTRUCTURE

One of the most important components of the Carnuel/West Tijeras Plan is infrastructure. Water and wastewater infrastructure dominated the discussion at public meetings. Transportation infrastructure and public utilities issues are also discussed in this plan.

Water Resources

Water supply for domestic use is a major priority for residents in the plan area. Currently all residents in the Carnuel/West Tijeras area depend on individual wells for domestic water. The production of wells is dependent on the geological formation the wells are drilled and the water production characteristics of that formation. For example, wells in Carnuel range from around 60 feet in depth in older homes located near the creek to wells nearly 400 feet deep in homes located at higher elevations. The production of wells varies throughout the study area with some well producing just a couple of gallons a minute to wells that produce close to 10 gallons a minute. In recent years, many older shallow wells have been replaced by wells that are drilled deeper into the water table. In addition, the yields of wells are unpredictable, and in some locations wells are several hundred feet in depth and may not even produce enough water for a three-bedroom house.

A major constraint on water resources is not only water quantity but water quality. Water quality for domestic use is very poor in some parts of the study area. Naturally occurring minerals such as arsenic and fluoride are abundant in ground water sources. The Carnuel area has a significant groundwater quality issue and may be the most difficult water quality problem to resolve within Bernalillo County. Ground water is also high in nitrates due to seepage into wells from liquid waste disposal systems. Additionally, the area has an overwhelming number of non-compliant wastewater systems.

The location of the former Gulton Industries facility is now known as the ground water pollution Gulton Site. It is located at the western boundary of the West Tijeras Canyon area plan immediately south of Old Route 66 and adjacent and east of the City of Albuquerque city limits. Wells located 200 feet or more away from the 70 acre plume are in no danger. The ground water plum is still being monitored and investigated to determine its horizontal and vertical extent. Approximately, 20 monitor wells have been drilled to investigate the plume. Currently, the plume consists of an area of approximately 70 acres and of unknown depth. The contaminants in the ground water are trichloroethene (TCE), Vinyl Chloride and other VOCs, these contaminants pose a cancer risk and therefore may qualify the Gulton Site as a superfund site once the plume investigation is complete.

Future development of drinking water wells near this plume may not be approved by the State Engineer's Office, the New Mexico Environment Department or the Bernalillo County Office of Environmental Health. New wells have the potential to tap into the plume or reshape and move the plume in an unknown manner. Future development of the area may require the import of utility water.



In the last few years, area residents, the Carnuel Acequia Association, and the Carnue Land Grant have collaborated to form the Carnuel Mutual Domestic Waters Users Association (Carnuel Mutual Domestic) for the purpose of establishing a community-owned water utility to address water quality issues. The Carnuel Mutual Domestic currently has over 200 members, all of which are from Echo Canyon, Monticello, and Carnuel. In the last year, the Carnuel Mutual Domestic has secured funding for the placement of a community well and the construction of a storage tank and service line which will run along Highway 333 to eastbound Exit 170. The community well has been drilled and the 140,000 gallon storage tank will be constructed in spring of 2006. The well site and tank are located near Tijeras on Carnue Land Grant property. The Carnuel Mutual Domestic recently received funding from the State of New Mexico Water Trust Fund for additional monies to build service lines. It is estimated that over the next two years, approximately 180 households will be connected to the system. The long-term plan for the Carnuel Mutual Domestic is to service the entire Carnuel/West Tijeras area, including all existing homes in Coyote Springs, Monticello and Echo Canyon. (Carnuel Mutual Domestic Water and Waste Waster Consumer Association – Appendix D)

During the January 7th work session, participants agreed that the Carnuel Mutual Domestic should be the water utility servicing the existing development, West Tijeras landowners expressed the interest in having the Albuquerque/Bernalillo County Water Utility Authority (ABCWUA) service water infrastructure to any future development (see Map in Appendix X). In the future, the Carnuel Mutual Domestic would provide water utility service to Carnuel. West Tijeras landowners would continue to work with the ABCWUA to plan water utility service for the West Tijeras area.

Wastewater Utilities

The wastewater strategy identified by work session participants was to ultimately provide a central sewer for the entire plan area. This would mean transitioning from the use of individual septic tanks to using the existing eight-inch force main sewer line that runs from the Village of Tijeras to the City of Albuquerque at Tramway and Central. This could eventually lead to a developed sewer network for the plan area. Part of that process is to determine the capacity of the force main currently in place. Other major components include to determining the financial feasibility and administrative responsibility of such and effort. In terms of phasing the conversion to sewer service for the plan area, the immediate priority should be the Traditional Community District, where a majority of homes are located on lots less than ½ acre in size. The next phase could target existing homes on lots larger than ½-acre.

A major concern for the Carnuel community is that wastewater systems and shallow wells do not comply with current County ordinances. Residents that participated in the planning process believe that foremost attention should be given to resolving these problems within existing development. These properties need to comply with new water and wastewater ordinances. The State of New Mexico's Environmental Department and Bernalillo County Environmental Health ordinances require ¾ of an acre and adequate



site conditions to place a standard wastewater system. However, a number of these lots are smaller than ¾ of an acre. Many Carnuel residents are concerned about being able to live in Carnuel in the future because they are unable to afford bringing current septic tank systems up to current standards. In public meeting there was strong support for connecting residents in higher density areas to sewer service**.**

According to the Albuquerque/Bernalillo County Water Utility Authority (ABCWUA), the existing eight inch force main that is located through the plan area along Highway 333 has a capacity of 450,000 gallons per day. According to the ABCWUA, the service line is at 1% capacity with only six connections to the sewer line. The sewer line has the potential to service up to 1500 homes in the plan area. There are currently about 516 homes in the plan area. Although capacity of serving the master plan area with sewer service by the ABCWUA is possible, some outstanding issues must be addressed.

Constraints in providing sewer service in Plan Area

1. In the placement of service lines to specific residential neighborhoods will have slope and soil conditions that may be more challenging in the construction of lines and facilities related to sewer infrastructure.
2. Due to the amount of private roads, dedications for the placement of sewer lines will be a challenge in some locations within the study area.
3. The cost associated to the natural geography of the plan area will increase construction cost so State capital project money as well as Federal assistance will be needed to began service connection to existing residential area.

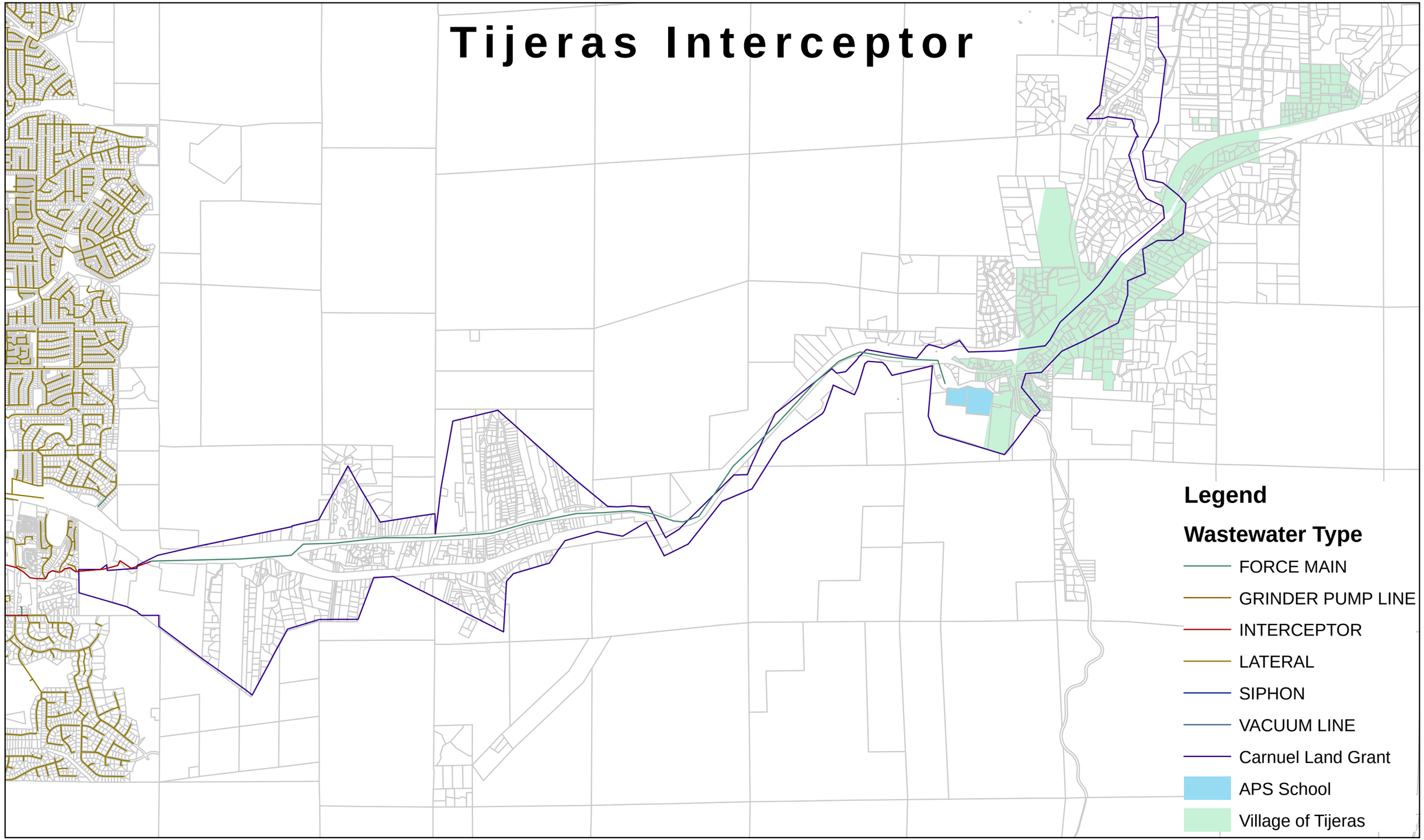
The ABCWUA as a policy has not allowed residential sewer connections to this line but are aware of the public health issues related to failing septic tanks in the study area (Information Session with ABCWUA members; April 20, 2006).

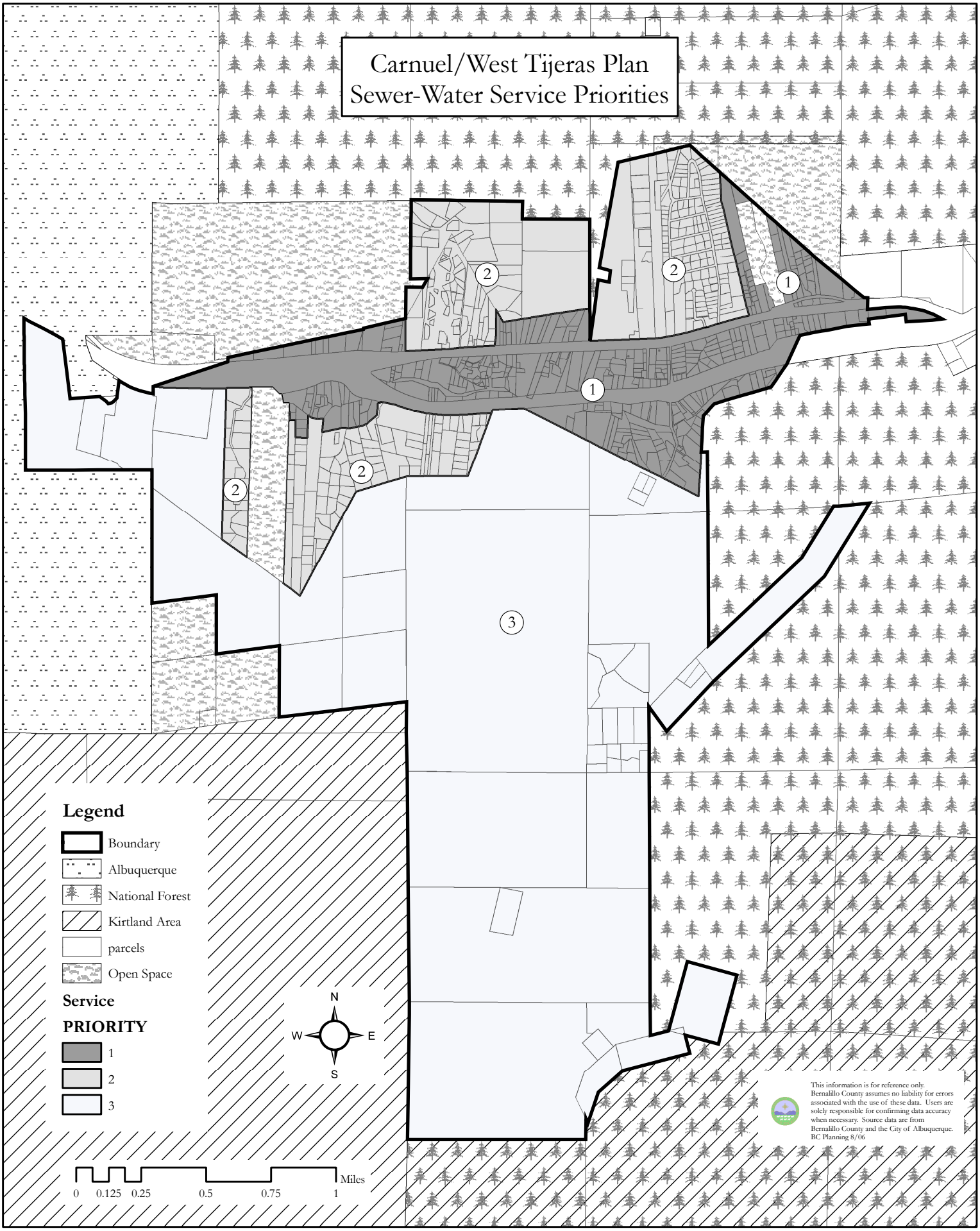
The ABCWUA stated that in order to begin to allow sewer connections for existing homes, the following improvements would need to be implemented to the existing line for the general Carnuel area:

1. Construction of a pump station on line that can lift wastewater at full capacity.
2. Placement of a connection line on the south side of Highway 333.
3. Placement of a connection along Highway 333, which would allow for gravity flow through the sewer line.

In order for the ABWCA to provide sewer service to future development in the West Tijeras portion of the study area, service agreements should be completed between the user and provider. New development should finance the cost of connecting to the sewer line along Old Route 66.

Tijeras Interceptor




Carnuel/West Tijeras Plan
Sewer-Water Service Priorities
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Albuquerque
National Forest
Kirtland Area
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BC Planning 8/06



Other Public Utilities

Throughout the planning process, there was little discussion of concerns regarding the improvements for cable, phone, or electricity utility services in the plan area. However, concern was expressed for improving the availability of natural gas service in the planning area. Although gas utilities already exist in the plan area, many of the study area's residents are on individual propane tanks. Despite the significant rise in costs of these fuels, residents support the extension of natural gas utilities throughout the planning area.

Transportation

The main transportation routes in the plan area are Interstate 40 (I-40) and NM 333 (Old Route 66). Private easements and subdivision roads link to these major routes to create a network.

Old Route 66 (NM 333) is the primary road used by the local community to travel to and from their residences, businesses, Albuquerque, and the greater East Mountain Area. This historic route was an original portion of the famous Turquoise Trail. Today, its significance continues to be recognized by residents and even government agencies. The New Mexico Department of Transportation (NMDOT) and the United States Department of Transportation-Federal Highway Administration have designated this alignment of Route 66/NM 333 as a Scenic Byway under the National Scenic Byways Program. This road is also part of the National Park Service's Route 66 Corridor Preservation Program. Grant funding and support may be available through these agencies to aid in the protection of the cultural and historic elements of the corridor.

In general, Bernalillo County, recognizes roads as either public or private, regardless of size or current condition. Public roads are maintained by government agencies, whereas private roads are the responsibility of property owners (individually or collectively). Although current roads, including numerous dirt roads, exist in varying conditions, all new roads, whether public or private, must meet Bernalillo County ordinances. The Bernalillo County Public Works Division has data and maps verifying road ownership and maintenance responsibilities.

By and large, the wider, heavily accessed roads are categorized as public roads. These include, for example, Coyote Springs Road and the bridge, maintained by Bernalillo County; Interstate 40 (I-40) and Frontage Road, maintained by New Mexico Department of Transportation. For Bernalillo County the priority is to pave all the roads under its accountability.

Smaller, less frequently accessed roads are likely to be privately owned. These are typically easements and internal roads within subdivisions that ultimately connect to public roads. Several are steep and unpaved, thus, prone to erode, especially during the monsoon season. Residents who use these roads and are responsible for their maintenance must take extra precautions at these times.



Examples of improved roads can be found in the Monticello and West Tijeras subareas. The size, condition, and signage of these roads facilitate access for large delivery truck and emergency vehicles.